Section 2.7 Transmission System Engineering

Data Adequacy Deficiency – Please provide a System Impact Study Report for the project. Analyze the system impact with and without the project during peak and off-peak system conditions, which will demonstrate conformance or non-conformance with the utility reliability and planning criteria with the following provisions:

a. Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.

b. Identify the reliability and planning criteria utilized to determine the criteria violation.

Provide power flow diagrams (MW, % loading & P. U. voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations appear.

Data Adequacy Response – The System Impact Study (SIS) Report was provided in Volume 2 of the AFC as Appendix 5A. The SIS has been revised and includes additional power flow diagrams. Further explanation is provided for the major assumptions in the base cases, and the study criteria is also identified in the revised SIS. **The original SIS should be removed and replaced with the attached SIS.**

The System Impact Study includes generation projects that had received a license or had a proposed decision granting a license from the CEC at the time the base cases were finalized. Those projects are:

- Texaco Sunrise Generation Facility interconnecting at the La Paloma switching station (320 MW)
- The Calpine Sutter Power Plant interconnecting with the Western Area Power Administration Elverta / Rio Linda and Elverta / Keswick 230 kV transmission lines (540 MW)
- The Calpine Los Medanos Energy Center interconnecting with the Pacific Gas and Electric Company (PG&E) Pittsburg Power Plant switchyard (555 MW).
- The PG&E La Paloma generation facility interconnecting at the PG&E Midway Substation (1,048 MW).
- The Calpine / Bechtel Delta Energy Center interconnecting at the PG&E Pittsburg Power Plant switchyard (880 MW).

Because of its location near the proposed Cosumnes Power Plant, all cases investigating impacts of the Cosumnes Power Plant were developed both with and without the following project in review by the California Energy Commission:

- The Florida Power and Light Energy Rio Linda / Elverta Power Plant interconnecting at the Western Area Power Administration Elverta Substation (560 MW).

The case also includes upgrades to the following Sacramento Municipal Utility District (SMUD) generation units within the SMUD service area:

- Campbell Soup (additional 50 MW)
- McClellan (additional 25 MW)

For the heavy summer cases, the following generation adjustments were made to compensate for the additions of the Rio Linda / Elverta generation and the Cosumnes Power Plant generation:

- When including the Rio Linda / Elverta generation (560 MW), transfers from the PG&E system to Southern California were increased from 650 MW to 1,200 MW, with corresponding generation decreases within Southern California.
- When including the Cosumnes Power Plant generation (1,000 MW), the following generation reductions were made within the PG&E system:
  - Diablo Canyon 1, reduced from 1,100 MW to 900 MW
  - Diablo Canyon 1, reduced from 1,100 MW to 900 MW
  - Helms Unit 1, reduced from 400 MW to 300 MW
  - Helms Unit 2, reduced from 400 MW to 300 MW
  - Moss Landing 6, reduced from 745 MW to 645 MW
  - Moss Landing 7, reduced from 745 MW to 645 MW
  - Pittsburg Unit 7, reduced from 469 MW to 369 MW
  - Morro Bay 4, reduced from 261 MW to 221 MW
  - Morro Bay 3, reduced from 296 MW to 246 MW

    (10 MW difference in system loss reduction)

For the spring cases, the following generation adjustments were made to compensate for the additions of the Rio Linda / Elverta generation and the Cosumnes Power Plant generation:

- When including the Rio Linda / Elverta generation (560 MW), all generation within the SMUD area remained unchanged at high levels, and all PG&E generation outside the study area was reduced by 3.7% at each generator.
- When including the Cosumnes Power Plant generation (1,000 MW), all generation within the SMUD area remained unchanged at high levels, and all PG&E generation outside the study area was reduced by 6.7% at each generator.